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TWO NEW PHARMACOLOGICAL PROPERTIES OF IBOGAINE COMMON TO THIS
ALKALOID AND TO COCAINE

by

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Ibogaïne, the principal alkaloid of Tabernanthe iboga Baillon, the drug that the natives of Gabon refer to as Iboga and consider to be such a powerful nervous stimulant that they prefer it to cola, has already been studied by many pharmacologists (1*) who have been unable to detect in it a physiological activity to which the properties of the drug from which it is extracted can be attributed. Thus, after describing many effects of this alkaloid, Lambert acknowledged that "it is rather difficult to explain on that basis the use that the natives make of Iboga".

However, the discovery by this physiologist of the local anesthetic action of ibogaïne and some other similarities between its effects and those of cocaine has impelled us to investigate whether, like cocaine, the principal alkaloid of Iboga reinforces the hypertensive action of epinephrine and abolishes the carotid sinus reflexes.

(1*) C. Phisalix, C.R. Soc. Biol. 53:1077, 1901, M. Lambert, C.R. Soc. Biol. 53:1096, 1901, and Arch. int. Pharmacodyn. 40:101, 1902, Lambert and Heckel, C.R. Acad. Sci. 133:1036, 1901, Pouchet and Chevalier, Bull. génér. Thérap. 149:(illeg.), 1905, J. Chevalier and Landrin, from A. Landrin's "De l'Iboga et de l'ibogaïne" (On Iboga and ibogaïne), Thesis for the degree of Doctor of Medicine, Paris, 1905, F. Rothlin and Raymond-Hamet, 116:1340, 1934, and 127:592, 1938, , Raymond-Hamet and B. Rothlin, Arch. int. Pharmacodyn. 63:127, 1939 (illeg.).

Working with a very pure ibogaine that we were able to isolate easily from roots of Tabernanthe iboga Baillon by a very different extraction method from the one described by Lambert and Dybowski (2*) and by Haller and Heckel (3*), our experiments showed that at the same time that it considerably increases the rise in pressure produced by epinephrine, this alkaloid diminishes and even abolishes the hypertensive response to carotid occlusion, which is to say that it possesses these two remarkable physiological effects of cocaine, one of which was discovered by Froelich and Loewi (4*) and the other by Vercauteren (5*).

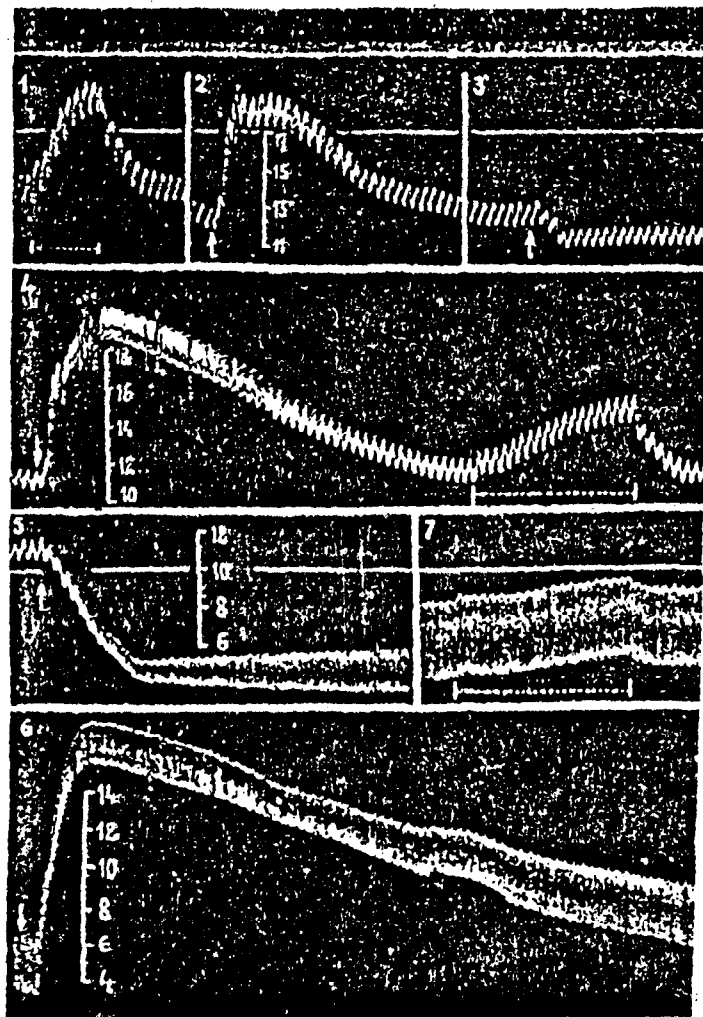
The tracings in the accompanying figure --, which are strikingly similar to Fig. 6 in the paper by the Belgian pharmacologist -- show (i) that a dose of epinephrine that initially increased carotid pressure by 62 mm Hg raises ^{it} by 86 mm Hg when the animal has previously received an intravenous injection of 4 mg/kg of ibogaine hydrochloride and by 108 mm Hg when it has previously been given a total dose of 16 mg/kg of this hydrochloride, and (ii) that hypertension produced by carotid occlusion, which had been 48 mm Hg at the start of the experiment, was reduced to 33 mm Hg by the first administration of ibogaine and to 11 mm Hg by the latter dose. In addition, they show that the hypertensive effects of epinephrine are not only reinforced but are also prolonged by ibogaine.

(2*) J. Dybowski and F.(?) Landrin, C.R. Acad. Sci. 133:748, 1902.

(3*) A. Haller and E. Heckel, C.R. Acad. Sci. 133:850, 1901.

(4*) A. Froelich and D. Loewi, Arch. J. Exper. Pathol. u. Pharmacol., 62:158, 1910.

(5*) E. Vercauteren, Arch. int. Pharmacodyn. (illeg.), 1939.



Since the principal alkaloid of Iboga belongs to the class of drugs we have called "sympathicosthenics", the "defatigant" action that the natives attribute to the drug that contains it provides experimental justification for our researches.

We should add that usually, following the injection of moderate or high doses of ibogaine, the carotid pressure exhibits a dose-dependent decrease and then remains for a long time below the level recorded prior to the injection of this dose.